Amendments to the Claims:

Claims 1-66 (Cancelled)

67. (Currently amended) A method for determining if a muscle fibre is intact and validating a test wherein the test is to determine a change in activation state of muscle precursor cells ~~is determined~~, the method comprising ~~use of~~ contacting a DNA intercalator ~~to determine that~~ with muscle fibers associated with the precursor cells ~~are intact~~, and determining whether myonuclei DNA is intercalated.

68. (Currently amended) The method according to claim 67 wherein the change in activation state is a fiber hypercontraction-dependent change, and wherein ~~the DNA intercalator is used with~~ with the method further comprises contacting a myotoxin with the muscle fibres to determine fiber membrane damage.

69. (Original) The method according to claim 67 wherein the test is a diagnostic test.

70. (Currently amended) A method for identifying a compound which effects a change in activation state of skeletal muscle satellite cells, comprising:

a) determining according to the method of claim 67 that fibers associated with the satellite cells are intact;

b) determining the activation state of satellite cells in the absence of the compound; and

c) determining the activation state of satellite cells treated with the compound;

wherein the difference between the two activation states identify the compound as a compound which effects a change in activation state of skeletal muscle satellite cells.

71. (Currently amended) A method for identifying a compound which effects a fiber hypercontraction-dependent change in activation state of skeletal muscle satellite cells, comprising:

a) determining according to the method of claim 67 that fibres associated with the satellite cells are intact;

~~a)~~b) treating an intact fiber containing skeletal muscle satellite cells with a myotoxin and a DNA intercalator to effect fiber hypercontraction;

~~b)~~c) determining the activation state of skeletal muscle satellite cells in the absence of the myotoxin, DNA intercalator and the compound; and

~~c)~~a) determining the activation state of skeletal muscle satellite cells treated with the compound in the absence of the myotoxin and DNA intercalator;

wherein the difference between the two activation states identify the compound as a compound which effects a fiber hypercontraction-dependent change in activation state of skeletal muscle satellite cells.

72. (Original) The method according to claim 67 wherein the DNA intercalator is ethidium bromide or propidium iodide.

73. (Original) The method according to claim 68 wherein the myotoxin is marcaine.

74. (New) The method according to claim 71 wherein the DNA intercalator is ethidium bromide or propidium iodide.

75. (New) The method according to claim 71 wherein the myotoxin is marcaine.

76. (New) The method according to claim 74 wherein the myotoxin is marcaine.

77. (New) The method according to claim 70 wherein the activation state of satellite cells is determined by determining the level of proliferation of satellite cells.

78. (New) The method according to claim 71 wherein the activation state of satellite cells is determined by determining the level of proliferation of satellite cells.

79. (New) The method according to claim 72 wherein the activation state of satellite cells is determined by determining the level of proliferation of satellite cells.

80. (New) The method according to claim 73 wherein the activation state of satellite cells is determined by determining the level of proliferation of satellite cells.

81. (New) The method according to claim 70 wherein the activation state of satellite cells is determined by monitoring new DNA synthesis in satellite cell nuclei.

82. (New) The method according to claim 71 wherein the activation state of satellite cells is determined by monitoring new DNA synthesis in satellite cell nuclei.

83. (New) The method according to claim 72 wherein the activation state of satellite cells is determined by monitoring new DNA synthesis in satellite cell nuclei.

84. (New) The method according to claim 73 wherein the activation state of satellite cells is determined by monitoring new DNA synthesis in satellite cell nuclei.

86. (New) The method according to claim 78 wherein new DNA synthesis is monitored by determining the incorporation of detectably labeled nucleotide analogues into DNA of satellite cell nuclei.

87. (New) The method according to claim 79 wherein new DNA synthesis is monitored by determining the incorporation of detectably labeled nucleotide analogues into DNA of satellite cell nuclei.

88. (New) The method according to claim 80 wherein new DNA synthesis is monitored by determining the incorporation of detectably labeled nucleotide analogues into DNA of satellite cell nuclei.

89. (New) The method according to claim 81 wherein new DNA synthesis is monitored by determining the incorporation of detectably labeled nucleotide analogues into DNA of satellite cell nuclei.